Bio-rad DNA Engine Tetrad 2

DNA Engine Tetrad 2 Specifications

Thermal Range	0-105 °C but no more than 30°C below ambient temperature (10-105°C for the slide chambers unit)
Temperature Accuracy	±0.3 °C of programmed target at 90°C, NIST- traceable (± 0.4°C for dual Alpha units)
Temperature uniformity	± 0.4°C well-to-well within 30 seconds of arrival at 90°C (±0.5°C for dual Alpha units)
Speed of ramping	Up to 3°C/sec for all single- and dual-block Alpha units; Up to 1.2°C/sec for the Slide Chambers Alpha unit
Sample capacity	Varies with installed Alpha unit
Line voltage	200–240 VAC
Frequency	50–60 Hz
Power	1600 W maximum
Fuses	Two 6.3 A, 250 V, 5 x 20 mm
Displays	One 1/4 size VGA screen (320 x 240), 16 colors
Ports	One 9-pin RS-232 serial port One ethernet port
Program Capacity	1,000 (typical)
Weight	21.6 kg (base only)
Size	47 x 61 x 16 cm (l x w x h, base only)
Projected Life Expectancy	10 years of normal usage (2 protocol runs/day) 7 years of heavy usage (consistently exceeding 2 protocol runs/day)

Gradient Specifications (96-Well Alpha unit only)

Gradient accuracy	+0.3°C of programmed target at end columns, 30 seconds after the timer starts for the gradient step, NIST–traceable

Column uniformity	+0.4°C, well–to–well within column, within 30 seconds of reaching target temperature
Calculator accuracy	+0.4°C of actual well temperature, NIST-traceable
Lowest temperature for gradient:	30°C
Highest temperature for gradient	105°C
Temperature differential range	1–24°C

Description of the Moto Alpha Unit

The Moto Alpha unit offers consistent plate positioning and sealing for use in automated systems. Although it may be operated when installed on a solitary cycler, the Moto Alpha unit is primarily designed for use in robotic systems employing networked DNA Engine, DNA Engine Tetrad, DNA Engine Tetrad 2, DNA Engine Dyad or Dyad Disciple cyclers. The Moto Alpha's electronically controlled heated lid features software-configurable lid pressure. The programmable lid pressure is spring measured for consistency over multiple experiments. The Moto Alpha unit is supplied with an adhesive-backed Microseal 'P+' sealing pad, which may be attached to the inside surface of the lid. When closed, the lid presses the pad down on the tops of reaction vessels loaded into the sample block, helping to maintain a vapor-tight seal during cycling. The high-lubricity block prevents plates from sticking to the block wells while plate ejectors in the lid help to gently release plates. Plate lifters raise plates to a height easily accessible by human or robotic fingers.

Description of the remote Alpha Dock system

The remote Alpha Dock system is designed to add flexibility to the installation and operation of the MJ Research DNA Engine line of thermal cyclers, which includes the PTC-200 DNA Engine Dyad and the PTC-221 Dyad Disciple thermal cyclers. The system allows Alpha units to be placed at a distance from the cycler base, enabling more efficient use of space and facilitating robotic operation. The RAD-0200's main components are a Dock Connector, which mounts in the base; and a Remote Alpha Dock, into which the Alpha units are mounted.